ABSTRACT

A device for measuring dispersion of a link between two switching nodes of an optical network comprises a phase measuring unit PMU for determining a first phase of a data signal traveling on a first wavelength $\lambda 1$, and a second phase of the same data signal traveling on a second wavelength $\lambda 2$, received consecutively over the link under measurement. A dispersion measurement controller controls operation of the phase measuring unit and characterizes the dispersion of the link at a wavelength of interest $\lambda = (\lambda 1 + \lambda 2)/2$, based on the first and second phases. The PMU includes a frame detector for determining a first and a second rotation signal indicative of the digital offset between the first and second test clocks with a respective frame start, and a phase detector for measuring the phase of these test clocks with respect to a static reference. The static reference is provided by the same data signal transmitted continuously over a reference wavelength. The test and reference clocks are 1:n divided to extend the range of the measurement. A method for characterizing the dispersion of a link of an optical network is also provided.